

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1. (Currently Amended) A system for providing high frequency data communications in a satellite-based communications network, the system comprising:
- a plurality of communications satellites each having uplink and downlink antennas capable of receiving and transmitting a plurality of signals, each of said satellites having a communication control circuit;
- at least one of said satellites being a reconfigurable satellite having[[,]] a programmable frequency synthesizer coupled to a communications control circuit;
 - a routing table storing tuning information therein;
- a controller located on said satellite coupled to said communications control circuit, said controller controlling a frequency reconfiguration of said communications control circuit through said programmable frequency synthesizer in response to said tuning information.
- 2. (Original) A system as recited in claim 1 wherein each of said satellites further comprising a beam forming network coupled to said uplink and downlink antennas.
- 3. (Original) A system as recited in claim 1 wherein said communications control circuit comprises an up converter and a down converter.
- 4. (Original) A system as recited in claim 1 wherein said communications control circuit comprises a transponder.

Page 2 of 11

- 5. (Original) A system as recited in claim 4 wherein said transponder comprises an up converter and a down converter.
- 6. (Original) A system as recited in claim 1 wherein said communications control circuit comprises a time division multiple access switch.
- 7. (Original) A system as recited in claim 1 wherein said communications control circuit comprises a packet switch.
- 8. (Original) A system as recited in claim 1 wherein said plurality of communications satellites have an orbit selected from the group consisting of a LEO, MEO and GSO.

9. (Canceled)

- 10. (Previously Presented) A payload circuit as recited in claim 15 wherein said communications control circuit comprises an up converter and a down converter.
- 11. (Previously Presented) A payload circuit as recited in claim 15 wherein said communications control circuit comprises a transponder.
- 12. (Original) A payload circuit as recited in claim 11 wherein said transponder comprises an up converter and a down converter.
- 13. (Previously Presented) A payload circuit as recited in claim 15 wherein said programmable frequency synthesizer is coupled to said up converter and

Page 3 of 11

said down converter.

14. (Canceled)

- 15. (Currently Amended) A payload circuit for a satellite comprising:
- a receive array;
- a receive beam forming network;
- a transmit array;
- a transmit beam forming network;
- a communications control circuit for controlling communications of <u>said</u> satellite; and
- a reconfiguration circuit coupled to the communications control circuit for reconfiguring the communications control circuit, said reconfiguration circuit comprising a programmable frequency synthesizer, an on-board computer and a routing table having tuning information stored therein, said on-board computer controlling a reconfiguration of said communications control circuit through said programmable frequency synthesizer in response to said tuning information.
- 16. (Previously Presented) A payload circuit as recited in claim
 15 wherein said communications control circuit comprises a time division multiple
 access switch.
- 17. (Previously Presented) A payload circuit as recited in claim
 15 wherein said communications control circuit comprises a packet switch.



18. (Currently Amended) A method of configuring a satellite system having a plurality of satellites comprising the steps of:

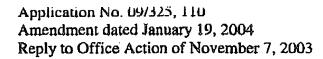
deploying a reconfigurable satellite;

transmitting reconfiguration instructions to said satellite;

reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in a routing table;

repositioning a satellite from a network position; and moving the reconfigurable satellite into the network position.

- 19. (Previously Presented) A method as recited in claim 18 wherein the step of reconfiguring the payload comprises the step of changing an up converter frequency and down converter frequency.
- 20. (Currently Amended) A method as recited in claim 19 wherein the step of changing the up converter frequency and down converter frequency comprises the step of changing a frequency in a programmable frequency synthesizer.
- 21. (Original) A method as recited in claim 18 wherein the step of reconfiguring a satellite comprises changing the amplitude or phase coefficients of a transmit and receive beam.
- 22. (Previously Presented) A method as recited in claim 18 further comprising storing tuning information in a routing table.



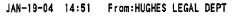
- 23. (Previously Presented) A method as recited in claim 18 wherein the step of reconfiguring the payload comprises changing the amplitude or phase coefficients of a beam in response to the tuning information in the routing table.
- 24. (Previously Presented) A method as recited in claim 18 wherein moving the reconfigurable satellite is performed using east/west station keeping.
- 25. (Previously Presented) A method as recited in claim 18 wherein moving the reconfigurable satellite is performed using north/south station keeping.
- 26. (Previously Presented) A method as recited in claim 18 further comprising updating the routing table from an order wire.
- 27. (Previously Presented) A method as recited in claim 18 further comprising updating the routing table from an RF control channel.
- 28. (Previously Presented) A method of configuring a satellite comprising:

deploying a reconfigurable satellite;

storing frequency tuning information in a routing table;

transmitting reconfiguration instructions to said satellite;

reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in the routing table.







29. (Previously Presented) A method as recited in claim 28 wherein the step of reconfiguring the payload comprises changing the amplitude or phase coefficients of a beam in response to the tuning information in the routing table.



- 30. (Previously Presented) A method as recited in claim 28 further comprising updating the routing table from an order wire.
- 31. (Previously Presented) A method as recited in claim 28 further comprising updating the routing table from an RF control channel.